

Indian Standard

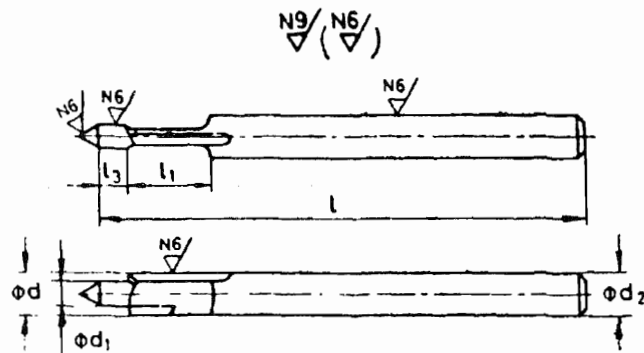
(Reaffirmed 2013)

SPECIFICATION FOR COUNTERSINKS 90°, WITH PARALLEL SHANKS AND SOLID PILOTS

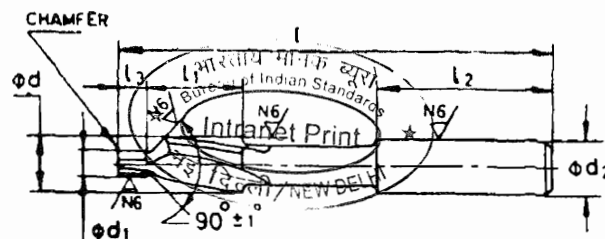
(First Revision)

1. Scope — Covers the dimensions and other requirements of countersinks 90° with parallel shanks and solid pilots suitable for countersinks according to IS : 3406 (Part 1)-1986 'Dimensions for countersinks and counterbores: Part 1 Countersinks (second revision)'.

2. Dimensions



WITH TWO FLUTES FOR COUNTERSINK DIAMETER d UP TO 5 mm



WITH THREE OR MORE FLUTES FOR COUNTERSINK DIAMETER d OVER 5 mm

All Dimensions in millimetres.

Cutting Diameter d z 9		Pilot Diameter d_1 e 8	Dia d_2 h 9	l	l_1	l_2	l_3
Over	Up to and Including						
2*	3.15	To be specified to suit pilot hole diameter when ordering (minimum possible diameter is $d_1 = 1.3 d$)	d	45	7	—	$\approx d_1$
3.15	5		d	56	10	—	
5	8		5	71	14	31.5	
8	12.5		8	80	18	35.5	
12.5	20		12.5	100	22	40	

*Includes 2 mm also

Note The figures are indicative of dimensions only and do not specify design features

Adopted 15 January 1988

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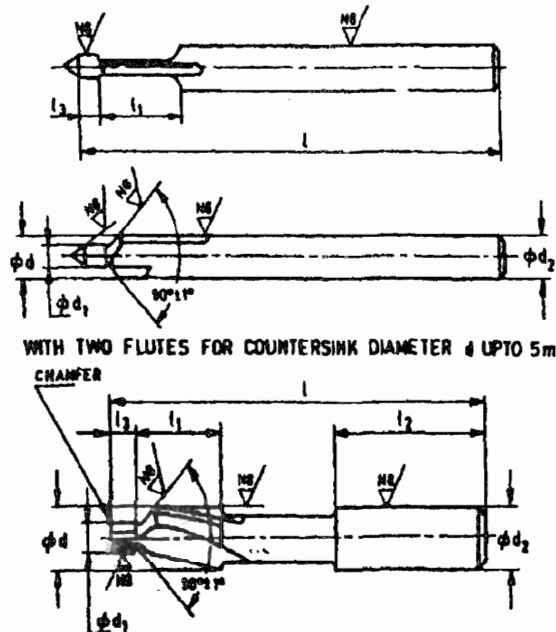
Gr 2

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

AMENDMENT NO. 1 MARCH 1997
TO
IS 5693 : 1988 SPECIFICATION FOR
COUNTERSINKS 90° WITH PARALLEL
SHANKS AND SOLID PILOTS

(First Revision)

(Page 1, clause 2, Figure) — Substitute the following figure for the existing:



WITH TWO FLUTES FOR COUNTERSINK DIAMETER d UPTO 5mm

WITH THREE OR MORE FLUTES FOR COUNTERSINK DIAMETER d OVER 5mm

(Page 3, Table 1, Title) - Substitute the following for the existing:

'Table 1 Sslection of Diametre for Type A and Type B Counershak'

(PED 10)

Reprography Unit, BIS, New Delhi, India

IS : 5693-1988

3. Tolerances — Tolerances on cutting length (l_1) and overall length (l) shall be as given below

All dimensions in millimetres

Cutting length/overall length		Tolerance
Over	Up to and Including	
—	30	± 0.5
30	120	± 0.8

4. Material — Shall be as given in IS 5099-1983 'Technical supply conditions for twist drills (*first revision*)'.

5. Hardness — Shall be as given in IS 5099-1983.

6. Designation — A countersink having Type A, fine series (f) diameter $d = 80$ mm and pilot diameter $d_1 = 4.3$ mm, conforming to this standard, and made of high speed steel shall be designated as

Countersink Af 8 $\times$ 4.3 IS 5693

7. General Requirements

7.1 The countersink shall be right hand cutting, unless otherwise specified

7.2 The countersinks with diameter d up to 5 mm shall have external centres according to IS 2473-1975 'Dimensions for centre holes, and shall also have straight flutes

7.3 The countersinks with diameter d above 5 mm shall have centre holes according to IS 2473-1975 and right hand helical flutes, unless otherwise specified

7.4 Number of flutes shall be two or three at the discretion of the manufacturer

7.5 When the flutes of countersinks run into the pilot, their edges shall not be removed within the length of the pilot

7.6 Countersinks may be provided with driving tenons according to IS 5360-1969 'Dimensions for driving tenons'.

7.7 Tool Type N shall be supplied according to IS 5099-1983, unless otherwise specified

8. Marking — Countersinks shall be marked with designation, manufacturer's name or trade mark, and month and year of manufacture

8.1 Standard Marking — Details available with the Bureau of Indian Standards

9. Protective Coating and Packing

9.1 Each countersink shall be covered with a suitable rust proofing material and then wrapped in non absorbent paper

9.2 Each countersink shall be protected by a cover bearing the countersink diameters and manufacturer's name or trademark

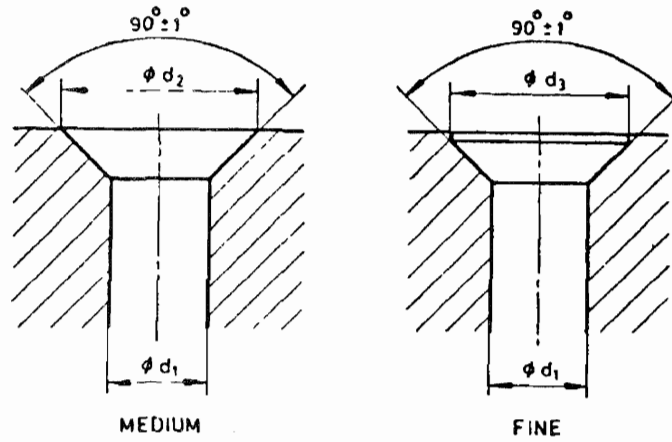
10. Sampling — The sampling and criteria of acceptance shall be in accordance with IS 7778 1975 'Methods for sampling small tools'

11. Selection — Selection of countersinks for countersunk Types A and B are given in Table 1

TABLE 1 SELECTION OF DIAMETERS FOR TYPE A COUNTERSINK

(Clause 11)

All dimensions in millimetres



Countersink Nominal Size ($d \times d_1$)	Application Countersink in Accordance with IS : 3406 (Part 1)-1986		
	Designation	Dia d_2	Dia d_3
2.4 × 1.2	A m 1	2.4	—
2.0 × 1.1	A f 1	—	2
2.8 × 1.4	A m 1.2	2.8	—
2.5 × 1.3	A f 1.2	—	2.5
3.3 × 1.6	A m (1.4)	3.3	—
2.8 × 1.5	A f (1.4)	—	2.8
3.7 × 1.8	A m 1.6	3.7	—
3.3 × 1.7	A f 1.6	—	3.3
4.1 × 2.1	A m (1.8)	4.1	—
3.8 × 2.0	A f (1.8)	—	3.8
4.6 × 2.4	A m 2	4.6	—
4.3 × 2.2	A f 2	—	4.3
5.7 × 2.9	A m (2.5)	5.7	—
5.0 × 2.7	A f (2.5)	—	5.0
6.5 × 3.4	A m 3	6.5	—
6.0 × 3.2	A f 3	—	6.0
6.3 × 3.2	B f 3	—	6.3
7.6 × 3.9	A m (3.5)	7.6	—
7.0 × 3.7	A f (3.5)	—	7.0
8.6 × 4.5	A m 4	8.6	—
8.0 × 4.3	A f 4	—	8.0

(Continued)

TABLE 1 SELECTION OF DIAMETERS FOR TYPE A COUNTERSINK - *Contd.*

Countersink Nominal Size ($d \times d_1$)	Application Countersink, in Accordance with IS : 3406 (Part 1)-1986		
	Designation	Dia d_2	Dia d_3
8.3 $\times$ 4.3	B f 4	—	8.3
9.5 $\times$ 5.0	A m (4.5)	9.5	—
9.0 $\times$ 4.8	A f (4.5)	—	9.0
10.4 $\times$ 5.5	A m 5	10.4	—
10.0 $\times$ 5.3	A f 5	—	10.0
10.4 $\times$ 5.3	B f 5	—	10.4
12.4 $\times$ 6.6	A m 6	12.4	—
11.5 $\times$ 6.4	A f 6	—	11.5
12.4 $\times$ 6.4	B f 6	—	12.4
16.4 $\times$ 9.0	A m 8	16.4	—
15.0 $\times$ 8.4	A f 8	—	15.0
16.5 $\times$ 8.4	B f 8	—	16.5

Note 1 — Sizes shown within brackets are of second preference.

Note 2 — Clearance hole dia d_1 shall be according to medium and fine series as specified in IS 77621-1982 'Dimensions for clearance holes for bolts and screws'.

EXPLANATORY NOTE

This standard was first published in 1970. In this revision:

- Types A and B countersinks have been given in table aligning various dimensions with IS : 3406 (Part 1)-1986,
- reference to IS : 5099-1983 has been included for material and hardness requirements,
- designation clause has been modified incorporating the type of countersink and the thread pitch series,
- sampling clause has been included, and
- surface finish has been included.

In the preparation of this standard, considerable assistance has been derived from

- ISO 4205-1977 'Countersinks 90° with parallel shank and solid pilots', issued by the International organization for Standardization (ISO), and
- DIN 1866-1975 'Parallel shank countersinks 90° with solid pilot', issued by the Deutsches Institute für Normung (DIN).